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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

Cisco Systems, Inc.,

Plaintiff,

v.

Capella Photonics, Inc.,

Defendant.

Case No. 3:20-cv-01858-EMC

**PLAINTIFF CISCO'S FIRST AMENDED
ANSWER TO DEFENDANT CAPELLA'S
COUNTERCLAIMS**

Plaintiff Cisco Systems, Inc. ("Plaintiff" or "Cisco") hereby supplements its response to the Counterclaims contained in the Answer filed by Defendant Capella Photonics, Inc. ("Defendant" or "Capella") on June 15, 2020.

PARTIES

1
2 *1. Capella is a Delaware corporation with a principal place of business at 1100 La Avenida*
3 *Street, Mountain View, CA 94043.*

4 Cisco admits that Capella is a Delaware corporation and does not dispute that Capella has a
5 principal place of business at 1100 La Avenida Street, Mountain View, CA 94043.

6 *2. On information and belief, Cisco Systems, Inc. is a California corporation with its*
7 *principal place of business on Tasman Drive in San Jose, California 95134.*

8 Admitted.

9 **JURISDICTION AND VENUE**

10 *3. This is a civil action for patent infringement under the patent laws of the United*
11 *States, 35 U.S.C. § 1 et. seq. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and*
12 *1138(a).*

13 Admitted.

14 *4. This Court has personal jurisdiction over Cisco in this action because Cisco has filed*
15 *claims for declaratory relief in this action and has committed acts within this district giving rise to*
16 *this action and has established minimum contacts with this forum such that the exercise of*
17 *jurisdiction over Cisco would not offend traditional notions of fair play and substantial justice.*

18 Admitted.

19 *5. On information and belief, Cisco, directly and through subsidiaries or intermediaries,*
20 *has committed and continues to commit acts of infringement in this district by, among other things,*
21 *making, selling, offering for sale, and/or importing products and/or services that infringe the*
22 *asserted patents, and also through its own use and testing of products and/or services that infringe*
23 *the asserted patents.*

24 Denied.

25 *6. Venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1391(b)-(d) and*
26 *1400(b). Cisco has committed acts of infringement in this district and has a regular and established*
27 *place of business in this district.*

Admitted that venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1391(b)-(d) and 1400(b) and that Cisco has a regular and established place of business in this district. Denied that Cisco has committed acts of infringement in this district.

FACTUAL BACKGROUND

7. *Founded in 2000, Capella is a pioneer of breakthrough optical switching technologies for use in optical transmission networks. Those technologies include Dense Wavelength Division Multiplexing (DWDM) transport platforms that include reconfigurable optical add and drop multiplexers (ROADMs). Capella has designed, developed, produced and sold switching devices for optical transmission networks. As a result of many years of research and development, Capella has been granted an extensive portfolio of patents, including but not limited to those in suit.*

Capella's allegations in the above paragraph are vague, and Cisco lacks sufficient information to form a belief regarding them, and therefore denies them.

I. THE TECHNOLOGY

8. *Optical fiber is used by telecommunications companies to transmit telephone signals, Internet communications, and cable television signals. Optical fiber is a fast and efficient medium for conducting data in the form of light. Various wavelengths of light travel along optical fiber at the same time, with each wavelength carrying specific data intended for delivery to a specific location. An optical fiber is able to carry Internet traffic, cellular communications, and digital television transmissions simultaneously by using different wavelengths of light to carry the data.*

Cisco admits that optical fiber is used by telecommunications companies to transmit telephone signals, Internet communications, and cable television signals. The remainder of Capella's allegations in the above paragraph are vague, and Cisco lacks sufficient information to form a belief regarding them, and therefore denies them.

9. *Fiber-optics were first developed in the 1970s. Fiber-optics have revolutionized telecommunications and have played a major role in the development of the Internet. Because of numerous advantages over electrical transmission, including speed and bandwidth, optical fibers have largely replaced copper wire communications in networks around the world.*

1 Cisco admits that at least those of ordinary skill in the art prior to the effective filing date of
 2 the '905 and '906 patents would have known of fiber optics. The remainder of Capella's allegations
 3 in the above paragraph are vague, and Cisco lacks sufficient information to form a belief regarding
 4 them, and therefore denies them.

5 10. *As is generally known, the process of communicating using fiber-optics has involved*
 6 *the following basic steps:*

7 *a) creating the optical signal involving the use of a laser transmitter, usually from an*
 8 *electrical signal from a traditional copper based telephone network;*

9 *b) relaying the optical signal along the fiber;*

10 *c) receiving the optical signal at an optical receiver; and*

11 *d) converting the optical signal back into an electrical signal.*

12 Cisco admits that fiber-optic communications involves creating an optical signal using a
 13 laser, relaying the optical signal along a fiber, and receiving the optical signal. Cisco further admits
 14 that optical signals can be converted to electrical signals, and vice-versa. The remainder of the
 15 allegations in the above paragraph are vague characterizations, and do not require a response.

16 11. *Networks using optical fiber span the globe. Networks on a continent or within a*
 17 *country form a grid. Line segments of fiber optic cable intersect at hubs or nodes. At these hubs or*
 18 *nodes, there are DWDM transport platforms. In modern networks, such as those traversing the*
 19 *United States, the DWDM transport platforms are typically modular in nature with optical switching*
 20 *at the individual wavelength level carried out by one or more ROADM modules using the pioneering*
 21 *technology invented and patented by Capella. The ROADM modules may, in turn, be comprised of*
 22 *one or more modules. The modules are sold by Cisco and other manufacturers in various*
 23 *configurations, and also individually, with specific instructions and guidance on how to build*
 24 *infringing platforms. The instructions and guidance are set forth in Cisco marketing materials and,*
 25 *on information and belief, are provided directly by Cisco sales representatives and system engineers*
 26 *to customers of the platforms and components.*

1 Cisco admits that at least those of ordinary skill in the art prior to the effective filing date of
2 the '905 and '906 patents would have known of networks using optical fiber, DWDM transport
3 platforms, and ROADM modules. Cisco denies that its sales representatives and system engineers
4 provide specific instructions and guidance on how to build infringing platforms to customers. The
5 remainder of Capella's allegations in the above paragraph are vague, and Cisco lacks sufficient
6 information to form a belief regarding them, and therefore denies them.

7 12. *DWDM transport platforms and their ROADM modules are the backbone of*
8 *advanced fiber optic networks because they route (or switch) signals traveling along fiber optic*
9 *cables in the directions they need to go. The switching occurs on the wavelength level, which means*
10 *that a ROADM can separate all the wavelengths of light entering the device and direct them to go in*
11 *different directions depending on the platform configuration. Certain wavelengths can be dropped*
12 *from a fiber altogether and new wavelengths can be added onto fibers. ROADMs can also control*
13 *flow across fiber optic cables. If traffic along one cable is particularly heavy at certain times, then a*
14 *ROADM can manage that load by sending traffic along one fiber at certain times and another fiber*
15 *at other times.*

16 Cisco admits that at least those of ordinary skill in the art prior to the effective filing date of
17 the '905 and '906 patents would have known of DWDM transport platforms, ROADM modules, and
18 dropping and adding signals on specific wavelengths traveling on a fiber. The remainder of
19 Capella's allegations in the above paragraph are vague, and Cisco lacks sufficient information to
20 form a belief regarding them, and therefore denies them.

21 13. *The development of ROADMs and their subsequent introduction into networks*
22 *enabled video to be sent over the Internet. Before ROADMs, service providers had to use Optical to*
23 *Electrical to Optical switches ("OEO switches"), which meant that data carried along optical*
24 *cables had to be converted into electrical signals to be routed. In addition, OEO switches were very*
25 *slow, expensive and difficult to house due to their refrigerator-like size. The introduction of*
26 *ROADMs by service providers into their networks in about 2005 changed this, by allowing video to*
27 *be transmitted at the speed of light through the ROADM instead of at the speed of electronics which*
28

1 *is approximately 1000 times slower. ROADMs are also significantly less expensive than OEO*
 2 *switches and much easier to house based their compact size.*

3 Capella's allegations in the above paragraph are vague, and Cisco lacks sufficient
 4 information to form a belief regarding them, and therefore denies them.

5 14. *As their name suggests, ROADMs are reconfigurable, which means that they can be*
 6 *adjusted to send traffic or wavelengths in different directions at different times.*

7 Cisco admits that at least those of ordinary skill in the art prior to the effective filing date of
 8 the '905 and '906 patents would have known of ROADMs. The remainder of Capella's allegations
 9 in the above paragraph are vague, and Cisco lacks sufficient information to form a belief regarding
 10 them, and therefore denies them.

11 15. *To ensure network reliability, ROADMs are subjected to a lengthy approval process*
 12 *before they are deployed. In addition, for most networks, more than one vendor is selected.*

13 Capella's allegations in the above paragraph are vague, and Cisco lacks sufficient
 14 information to form a belief regarding them, and therefore denies them.

15 16. *On information and belief, Cisco has offered for sale, sold and/or imported into the*
 16 *United States DWDM transport platforms and modules for optical networks deployed around the*
 17 *world including specifically in this District that infringe the '905 and '906 patents and continues to*
 18 *do so.*

19 Denied.

20 **II. THE PATENTS IN SUIT**

21 17. *Capella is the owner of United States Patent No. 6,879,750 entitled, "Reconfigurable*
 22 *Optical Add-Drop Multiplexers with Servo Control and Dynamic Spectral Power Management*
 23 *Capabilities" (the "'750 patent"). The '750 patent issued April 12, 2005 to Capella and claims*
 24 *priority to applications filed in 2001. The '750 was reissued to Capella on May 17, 2011 as United*
 25 *States Patent No. RE 42,368 (the "'368 patent"). The '368 patent was reissued to Capella on March*
 26 *17, 2020 as United States Patent No. RE 47,905 (the "'905 patent").*

Cisco admits that the '750 patent is titled, "Reconfigurable Optical Add-Drop Multiplexers with Servo Control and Dynamic Spectral Power Management Capabilities;" that it issued April 12, 2005; that it purports to claim priority to applications filed in 2001; that the '750 was reissued on May 17, 2011, as the '368 patent; and that the '368 patent was reissued on March 17, 2020, as the '905 patent. Cisco admits that Capella purports to be the owner of each of the patents listed in the above paragraph, including through its allegations in its answer, and in previously and recently filed complaints for patent infringement, but Cisco lacks sufficient information to admit or deny whether Capella's claim of ownership is correct.

18. One or more claims of the '905 patent is substantially identical to one or more claims of the original '368 patent.

Denied.

19. *Preferred embodiments of inventions recited in the '905 patent provide an optical add-drop apparatus comprising a multi-wavelength input port, a wavelength-selective device for spatially separating spectral channels, and an array of beam deflecting elements to reflect the spectral channels to selected ports. The inventions provide many advantages over prior art devices including the capability of routing spectral channels on a channel-by-channel basis and directing any spectral channel into any one of the output ports. Its underlying operation is dynamically reconfigurable, and its underlying architecture is intrinsically scalable to a large number of channel counts.*

Denied on the grounds that the above paragraph calls for a legal conclusion and does not provide a complete recitation of the features of the preferred embodiments.

20. *Capella is the owner of United States Patent No. 6,625,346 entitled, "Reconfigurable Optical Add-Drop Multiplexers with Servo Control and Dynamic Spectral Power Management Capabilities" (the "'346 patent"). The '346 patent issued September 23, 2003 to Capella and claims priority to applications filed in 2001. The '346 patent was reissued to Capella on November 14, 2006 as United States Patent No. RE 39,397 (the "'397 patent"). The '397 was reissued to Capella on September 6, 2011 as United States Patent No. RE 42,678 (the "'678 patent"). The '678 patent*

1 *was reissued to Capella on March 17, 2020 as United States Patent No. RE 47,906 (the “’906*
 2 *patent”).*

3 Cisco admits that the ’346 patent is titled, “Reconfigurable Optical Add-Drop Multiplexers
 4 with Servo Control and Dynamic Spectral Power Management Capabilities;” that it issued
 5 September 23, 2003; that it purports to claim priority to applications filed in 2001; that the ’346 was
 6 reissued on November 14, 2006, as the ’397 patent; that the ’397 patent was reissued on September
 7 6, 2011, as the ’678 patent; and that the ’678 patent reissued on March 17, 2020 as the ’906 patent.
 8 Cisco admits that Capella purports to be the owner of each of the patents listed in the above
 9 paragraph, including through its allegations in its answer, and in previously and recently filed
 10 complaints for patent infringement, but Cisco lacks sufficient information to admit or deny whether
 11 Capella’s claim of ownership is correct.

12 21. *One or more claims of the ’906 patent is substantially identical to one or more claims*
 13 *of the original ’678 patent.*

14 Denied.

15 22. *Preferred embodiments of inventions recited in the ’906 patent provide wavelength-*
 16 *separating-routing apparatus comprising an input port for a multiple wavelength optical signal, a*
 17 *wavelength-separator for separating the multiwavelength optical signal, and an array of channel*
 18 *micromirrors to reflect the spectral channels to selected ports. The inventions provide many*
 19 *advantages over prior art devices including the capability of routing spectral channels on a channel-*
 20 *by-channel basis and directing any spectral channel into any one of the output ports. Its underlying*
 21 *operation is dynamically reconfigurable, and its underlying architecture is intrinsically scalable to a*
 22 *large number of channel counts.*

23 Denied on the grounds that the above paragraph calls for a legal conclusion and does not
 24 provide a complete recitation of the features of the preferred embodiments.

25 23. *The ’905 and ’906 patents, and all members of the chain discussed above, are*
 26 *assigned to Capella and Capella holds the right to sue and to recover damages for infringement,*
 27
 28

1 *including past infringement, of each of the '905 and '906 patents (collectively, the "Asserted*
 2 *Patents").*

3 Denied that Capella holds the right to sue and to recover for pre-suit damages of each of the
 4 '905 and '906 patents (collectively, the "Asserted Patents"). As but one example, Cisco is entitled to
 5 intervening rights under 35 U.S.C. § 252 because the scope of the claims of the Asserted Patents are
 6 narrower than the scope of the claims of the original patents from which those patents reissued. *See*
 7 Exhibit 1 (demonstrative comparing the claims of the Asserted Patents to the claims of the original
 8 patents from which the Asserted Patents reissues showing that all of the claims of the Asserted
 9 Patent contain limitations not present in the claims of the original patents). Cisco lacks sufficient
 10 information to admit or deny the remaining allegations of the above paragraph, and therefore denies
 11 them.

12 **III. CISCO'S ALLEGED DIRECT INFRINGEMENT**

13 24. *On information and belief, Cisco, directly and through subsidiaries or intermediaries,*
 14 *has committed and continues to commit acts of infringement by, among other things, making, selling,*
 15 *offering for sale, and/or importing products and/or services that infringe the Asserted Patents, and*
 16 *also through its own use and testing of products and/or services that infringe the Asserted Patents.*

17 Denied.

18 **IV. CISCO'S ALLEGED INDIRECT INFRINGEMENT**

19 25. *Cisco's infringement began long ago and has continued willfully.*

20 Denied.

21 26. *Cisco has been on notice of infringement since at least 2014 when Capella filed suit*
 22 *for infringement of the '368 and '678 patents against Cisco in the U.S. District Court for the*
 23 *Southern District of Florida in an action entitled Capella Photonics, Inc. v. Cisco Systems, Inc.*
 24 *(Case No. 1:14-cv-20529-PAS). That action was consolidated with other actions and subsequently*
 25 *transferred to the Northern District of California, where it was assigned Case No. 3:14-cv-03348-*
 26 *EMC. In connection with its defense of that action, Cisco has followed and participated in post-*
 27 *grant proceedings for the '368 and '678 patents since 2014 and its counsel reported to the court on*
 28

1 *those post-grant proceedings. Since December 2019, Cisco has been on notice of the PTO's decision*
2 *to reissue the '368 and '678 patents and the scope of the reissued claims. Since February 2020,*
3 *Cisco has known about the March 17, 2020 issuance of the '905 and '906 patents and the scope of*
4 *the reissued claims.*

5 Cisco admits that Capella filed suit for infringement of the '368 and '678 patents against
6 Cisco in the U.S. District Court for the Southern District of Florida in an action entitled *Capella*
7 *Photonics, Inc. v. Cisco Systems, Inc.* (Case No. 1:14-cv-20529-PAS), and that action was
8 transferred to the Northern District of California, where it was assigned Case No. 3:14-cv-03348-
9 EMC. Cisco further admits that it participated in *inter partes* review proceedings for the '368 and
10 '678 patents beginning in 2014. Cisco admits that Cisco had knowledge of the U.S. Patent Office's
11 intention to publish reissue patents stemming from the '368 and '678 patents before the March 17,
12 2020 reissue date. Cisco denies that it has been on notice of infringement of any patent, including
13 the '368 and '678 patents, or the '905 and '906 patents since 2014, or at any point in time, for at
14 least the reasons that (i) Cisco does not infringe any claims of those patents, and (ii) the '905 and
15 '906 patents did not issue until March 17, 2020, and issued with claims that are materially different
16 in scope than the underlying '368 and '678 patents. The remainder of Capella's allegations in the
17 above paragraph are vague, and Cisco lacks sufficient information to form a belief regarding them,
18 and therefore denies them.

19 27. *Cisco is a known market leader and one of the dominant players in optical transport*
20 *platforms.*

21 The allegations of the above paragraph consist of vague characterizations that require no
22 response.

23 28. *Cisco knows that it provides and markets products to customers that, when used,*
24 *directly infringe the '905 and '906 patents. These products include, without limitation, the 15454*
25 *MSTP and NCS 2000 products (collectively "Infringing Products" and/or "Accused*
26 *Instrumentalities").*

27 Denied.
28

29. Cisco actively encourages the installation and use of its Infringing Products. For example, Cisco explains to customers the individual modules that are available to customers as well as standard and custom configurations. See e.g. [citations omitted] where Cisco describes standard and custom platform configurations.

Cisco admits that it provides configuration information related to the 15454 MSTP and NCS2000 product lines. Cisco denies the remainder in the allegations in the above paragraph, including that any Cisco product infringes, or that Cisco encourages infringement.

30. On information and belief, Cisco has designed, marketed, and sold its Infringing Products to third parties with knowledge and the specific intent to cause the third parties to make, use, offer to sell, or sell in the United States, and/or import into the United States the Infringing Products. See *Id.*

Denied.

31. On information and belief, Cisco actively encourages its customers and end users to directly infringe the '905 and '906 patents by encouraging them to use the Infringing Products.

Denied.

32. On information and belief, Cisco promoted and continues to promote the sales of the Accused Instrumentalities, e.g., through Cisco's user manuals, product support, marketing materials, demonstrations, installation support, and training materials to actively induce the users of the accused products to infringe the '905 and '906 patents.

Denied.

33. *Cisco knew or should have known and intended that its continued actions would infringe and actively induce and contribute to the infringement of the claims of the '368 and '678 patents as reissued in the '905 and '906 patents.*

Denied.

COUNT I

(ALLEGED INFRINGEMENT OF THE '905 PATENT)

34. Paragraphs 1- 33 are incorporated by reference as if fully set forth herein.

1 The above paragraph does not contain any allegation of fact, and, therefore, no answer is
2 required.

3 35. *Pursuant to 35 U.S.C. § 282, the '905 patent is presumed valid.*

4 Cisco admits that issued U.S. Patents are entitled to a presumption of validity, but Cisco
5 denies that the '905 patent is valid.

6 36. *On information and belief, Cisco directly infringes the '905 patent by having made,*
7 *making, using, offering for sale, selling and/or importing into the United States the Infringing*
8 *Products and Accused Instrumentalities, and continues to do so.*

9 Denied.

10 37. *On information and belief, the Infringing Products directly infringe at least claim 23*
11 *of the '905 patent at least in the exemplary manner described below.*

12 Denied.

13 38. *The Infringing Products comprise an optical add-drop apparatus comprising: [a] the*
14 *fiber collimator input port for an input multi-wavelength optical signal having first spectral*
15 *channels the fiber collimator one or more other ports for second spectral channels the output port*
16 *for an output multi-wavelength optical signal; [b] a wavelength-selective device for spatially*
17 *separating said spectral channels; [c] a spatial array of beam-deflecting elements positioned such*
18 *that each element receives a corresponding one of said spectral channels, each of said elements*
19 *being individually and continuously controllable in two dimensions to reflect its corresponding*
20 *spectral channel to a selected one of said output port or the fiber collimator ports and to control the*
21 *power of the spectral channel reflected to said output port or the fiber collimator selected port.*

22 Denied.

23 39. *Cisco offers the 15454 MSTP and NCS 2000 products. These products are modular*
24 *Dense Wavelength Division Multiplexing (DWDM) add-drop optical transport platforms designed*
25 *for metro, regional and long-haul networks.*

1 Cisco offers product lines branded 15454 MSTP and NCS2000. The remainder of the
2 allegations in the above paragraph are vague, and Cisco lacks sufficient information to form a belief
3 regarding them, and therefore denies them.

4 40. *The NCS 2000 is a modular add-drop optical platforms for dense wavelength-division*
5 *multiplexing (DWDM) solutions. It delivers touchless programmability, massive scale, and ultra-*
6 *long-haul performance necessary for tomorrow's converged network architectures. The 15454*
7 *MSTP is a modular add-drop optical platform that offers DWDM, ROADM and network design*
8 *capabilities to deliver and manage growing networks. See e.g. [citations omitted].*

9 The cited Cisco documentation speaks for itself and requires no response. To the extent that
10 Capella attempts to characterize that documentation in the above paragraph, those characterizations
11 are vague, and Cisco lacks sufficient information to form a belief regarding them, and therefore
12 denies them.

13 41. *The Infringing Products use a flexible ROADM architecture. The ROADM*
14 *functionality is delivered using Wavelength Selective Switch (WSS), a module of the platforms.*

15 The allegations in the above paragraph consist of vague characterizations, and Cisco lacks
16 sufficient information to form a belief regarding them, and therefore denies them. Cisco denies that
17 any of its products infringe the '905 or '906 patents.

18 42. *According to Cisco, the Cisco ONS 15454 MSTP offers a fully integrated*
19 *reconfigurable optical add/drop multiplexing (ROADM) solution, for delivering any wavelength to*
20 *any location in a metro or regional network. The ROADM cards are part of the Cisco ONS 15454*
21 *MSTP intelligent DWDM architecture engineered to reduce DWDM complexity and speed the*
22 *deployment of next-generation networking solutions. Further, according to Cisco, the large numbers*
23 *of ports on the Cisco NCS 2000 Flex Spectrum Single Module ROADM Line Cards are made*
24 *possible by the twin-WSS route and select architecture featured by Cisco nLight ROADMs. By*
25 *routing, instead of broadcasting, express channels, insertion loss is reduced, preserving optical*
26 *signal-to-noise ratio (OSNR). The Cisco nLight architecture therefore allows multi-degree ROADM*
27 *nodes, plus CCOFS add/drop, at large scale. See Id.*

1 The cited Cisco documentation speaks for itself and requires no response. To the extent that
2 Capella attempts to characterize that documentation in the above paragraph, those characterizations
3 are vague, and Cisco lacks sufficient information to form a belief regarding them, and therefore
4 denies them.

5 43. *The WSS enables dynamic optical branching to multiple different optical paths, in*
6 *addition to facilitating local add/drop of individual wavelengths. The ROADM includes multiple*
7 *fiber collimator in/out ports. The fiber collimators provide and serve as input ports for*
8 *multiwavelength optical signals and as output and other ports. See Id.*

9 Denied.

10 44. *The WSS use a wavelength separator or diffraction grating as a wavelength selective*
11 *device for separating the multi-wavelength optical signal from a fiber collimator input port into*
12 *multiple spectral channels. This splits the signal into multiple wavelengths for optical branching.*
13 *The WSS enables optical branching to multiple different optical paths, in addition to facilitating*
14 *local add/drop of individual wavelengths. See Id.*

15 Denied.

16 45. *The WSS includes a spatial array of individually and continuously controllable beam-*
17 *deflecting elements, including MEMs and LCoS channel micromirrors, positioned such that each*
18 *element receives a corresponding one of the spectral channels, each of the elements being*
19 *individually and continuously controllable in two dimensions to reflect its corresponding spectral*
20 *channel to a selected one of the output port or the fiber collimator ports and to control the power of*
21 *the spectral channel reflected to the output port or the fiber collimator selected port. See Id.*

22 Denied.

23 46. *The WSS includes a multiwavelength fiber collimator input port. A grating is used to*
24 *separate the wavelengths, and each wavelength is directed onto its own moveable mirror or beam*
25 *deflecting element. This allows automatic power management of each wavelength and switching of*
26 *individual wavelengths to selected fiber collimator output ports.*

27 Denied.
28

1 47. *Cisco also directly infringes other claims of the '905 patent.*

2 Denied.

3 48. *On information and belief, use of the Accused Instrumentalities results in*
4 *infringement of the claims of the '905 patent.*

5 Denied.

6 49. *Cisco's affirmative acts of making, using, selling, offering for sale, and/or importing*
7 *the Accused Instrumentalities have induced and continue to induce users of the Accused*
8 *Instrumentalities to use the Accused Instrumentalities in their normal and customary way to infringe*
9 *the claims of the '905 patent.*

10 Denied.

11 50. *On information and belief, at least as of the filing of this Complaint and likely earlier*
12 *as set forth above, Cisco knew of the '905 patent, and knew that its activities would lead to*
13 *infringement of the patent by its customers and end users.*

14 Denied.

15 51. *For example, Cisco sells the Accused Instrumentalities to customers and end users*
16 *with the intent that such customers and end users will use the Accused Instrumentalities in such a*
17 *way to constitute direct infringement of at least Claim 23 of the '905 patent as set forth above.*

18 Denied.

19 52. *For example, Cisco explains to customers the individual modules that are available*
20 *to customers as well as standard and custom configurations. See Id.*

21 Denied.

22 53. *Cisco performed the acts that constitute induced infringement, and would induce*
23 *actual infringement, with the knowledge of the '905 patent and its claims and with the knowledge, or*
24 *willful blindness to the probability, that the induced acts would constitute infringement.*

25 Denied.

26 54. *On information and belief, Cisco engaged in such inducement to promote the sales of*
27 *the Accused Instrumentalities, e.g., through Cisco's user manuals, product support, marketing*
28

1 *materials, demonstrations, installation support, and training materials to actively induce the users of*
2 *the accused products to infringe the '905 patent.*

3 Denied.

4 55. *Accordingly, Cisco has induced and continues to induce end users of the accused*
5 *products to use the accused products in their ordinary and customary way with compatible systems*
6 *to make and/or use systems infringing the '905 patent, knowing that such use of the Accused*
7 *Instrumentalities with compatible systems will result in infringement of the '905 patent. Accordingly,*
8 *Cisco has been and currently is inducing infringement of the '905 patent in violation of 35 U.S.C. §*
9 *271(b).*

10 Denied.

11 56. *Cisco has also contributorily infringed and continues to contribute to infringement of*
12 *claims of the '905 patent by selling and offering to sell, offering to commercially distribute,*
13 *commercially distributing, making, and/or importing the Accused Instrumentalities, which are used*
14 *in practicing the process, or using the systems, claimed by the '905 patent, knowing the Accused*
15 *Instrumentalities to be especially made or especially adapted for use in an infringement of the '905*
16 *patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use.*

17 Denied.

18 57. *On information and belief, at least as of the filing of this Complaint and likely earlier*
19 *as set forth above, Cisco knew of the '905 patent, and knew that its activities would lead to*
20 *infringement of the patent by its customers and end users.*

21 Denied.

22 58. *Cisco knows the modules in the Accused Instrumentalities to be especially made or*
23 *especially adapted for use in infringement of the '905 patent, not a staple article, and not a*
24 *commodity of commerce suitable for substantial noninfringing use. For example, the ordinary way*
25 *of using the Accused Instrumentalities infringes the patent claims, and as such, is especially adapted*
26 *for use in infringement. Accordingly, Cisco has been, and currently is, contributorily infringing the*
27 *'905 patent, in violation of 35 U.S.C. § 271(c).*

1 Denied.

2 59. *Capella has suffered and will continue to suffer damage as a result of Cisco's*
3 *infringement of the '905 patent in an amount to be proven at trial.*

4 Denied.

5 60. *Upon information and belief, Cisco did not have and could not have had a reasonable*
6 *belief that the Accused Instrumentalities did not infringe the Asserted Patents. Any manufacturing,*
7 *sales, offers for sale, uses, or importation by Defendants of the Infringing Products reflects a*
8 *deliberate and knowing decision to infringe the '905 patent or, at the very least, a reckless disregard*
9 *of Capella's patent rights. By its prior action, Capella made known to Cisco that Cisco's activities in*
10 *making, using, offering for sale, selling and/or importing into the United States the Infringing*
11 *Products and Accused Instrumentalities constituted a sufficient risk of infringement that Cisco*
12 *should have ceased those activities. Under the circumstances, Cisco knew or should have known the*
13 *risk of infringement caused by Cisco's activities related to the Accused Instrumentalities. Despite*
14 *Cisco's knowledge, Cisco intentionally ignored or recklessly disregarded the risk that its activities*
15 *infringed the Asserted Patents. Cisco's conduct manifested deliberate or reckless disregard of*
16 *Capella's rights in the Asserted Patents and was malicious, flagrant and in bad faith.*

17 Denied.

18 61. *Cisco's manufacturing, sales, offers for sale, uses, or importation of the Infringing*
19 *Products has been willful, and Capella is entitled to treble damages and attorneys' fees and costs*
20 *incurred in this action, along with prejudgment interest under 35 U.S.C. §§ 284 & 285.*

21 Denied.

22 62. *Cisco will continue to infringe the '905 patent unless and until it is enjoined by this*
23 *Court.*

24 Denied.

25 63. *Cisco's acts of infringement have caused and will continue to cause irreparable harm*
26 *to Capella unless and until Cisco is enjoined by this Court.*

27 Denied.

COUNT II**(ALLEGED INFRINGEMENT OF THE '906 PATENT)**

64. *Paragraphs 1-63 are incorporated by reference as if fully set forth herein.*

The above paragraph does not contain any allegation of fact, and, therefore, no answer is required.

65. *Pursuant to 35 U.S.C. § 282, the '906 patent is presumed valid.*

Cisco admits that issued U.S. Patents are entitled to a presumption of validity, but Cisco denies that the '906 patent is valid.

66. *On information and belief, Cisco directly infringes the '906 patent by having made, making, using, offering for sale, selling and/or importing into the United States the Infringing Products and Accused Instrumentalities, and continues to do so.*

Denied.

67. *On information and belief, the Infringing Products directly infringe at least claim 68 of the '906 patent at least in the exemplary manner described below.*

Denied.

68. *The Infringing Products comprise a wavelength-separating-routing apparatus, comprising: a) multiple fiber collimators, providing and serving as an input port for a multiwavelength optical signal and a plurality of output ports; b) a wavelength-separator, for separating said multi-wavelength optical signal from said fiber collimator input port into multiple spectral channels; c) a beam-focuser, for focusing said spectral channels into corresponding spectral spots; and d) a spatial array of channel micromirrors positioned such that each channel micromirror receives one of said spectral channels, said channel micromirrors being pivotal about two axes and being individually and continuously controllable to reflect corresponding received spectral channels into any selected ones of said fiber collimator output ports and to control the power of said received spectral channels coupled into said fiber collimator output ports.*

Denied.

69. *Cisco offers the 15454 MSTP and NCS 2000 products. These products are modular Dense Wavelength Division Multiplexing (DWDM) add-drop optical transport platforms designed for metro, regional and long-haul networks.*

Cisco offers product lines branded 15454 MSTP and NCS2000. The remainder of the allegations in the above paragraph are vague, and Cisco lacks sufficient information to form a belief regarding them, and therefore denies them.

70. *The NCS 2000 is a modular add-drop optical platforms for dense wavelength-division multiplexing (DWDM) solutions. It delivers touchless programmability, massive scale, and ultra-long-haul performance necessary for tomorrow's converged network architectures. The 15454 MSTP is a modular add-drop optical platform that offers DWDM, ROADM and network design capabilities to deliver and manage growing networks. See e.g. [citations omitted].*

The cited Cisco documentation speaks for itself and requires no response. To the extent that Capella attempts to characterize that documentation in the above paragraph, those characterizations are vague, and Cisco lacks sufficient information to form a belief regarding them, and therefore denies them.

71. *The Infringing Products use a flexible ROADM architecture. The ROADM functionality is delivered using Wavelength Selective Switch (WSS), a module of the platforms.*

The allegations in the above paragraph consist of vague characterizations, and Cisco lacks sufficient information to form a belief regarding them, and therefore denies them. Cisco denies that any of its products infringe the '905 or '906 patents.

72. *According to Cisco, the Cisco ONS 15454 MSTP offers a fully integrated reconfigurable optical add/drop multiplexing (ROADM) solution, for delivering any wavelength to any location in a metro or regional network. The ROADM cards are part of the Cisco ONS 15454 MSTP intelligent DWDM architecture engineered to reduce DWDM complexity and speed the deployment of next-generation networking solutions. Further, according to Cisco, the large numbers of ports on the Cisco NCS 2000 Flex Spectrum Single Module ROADM Line Cards are made possible by the twin-WSS route and select architecture featured by Cisco nLight ROADMs. By*

1 *routing, instead of broadcasting, express channels, insertion loss is reduced, preserving optical*
2 *signal-to-noise ratio (OSNR). The Cisco nLight architecture therefore allows multi-degree ROADM*
3 *nodes, plus CCOFS add/drop, at large scale. See Id.*

4 The cited Cisco documentation speaks for itself and requires no response. To the extent that
5 Capella attempts to characterize that documentation in the above paragraph, those characterizations
6 are vague, and Cisco lacks sufficient information to form a belief regarding them, and therefore
7 denies them.

8 73. *The WSS enables dynamic optical branching to multiple different optical paths, in*
9 *addition to facilitating local add/drop of individual wavelengths. The ROADM includes multiple*
10 *fiber collimator in/out ports. The fiber collimators provide and serve as input ports for*
11 *multiwavelength optical signals and as output and other ports. See Id.*

12 Denied.

13 74. *The WSS use a wavelength separator or diffraction grating as a wavelength-*
14 *separator for separating a multi-wavelength optical signal from a fiber collimator input port into*
15 *multiple spectral channels. This splits the signal into multiple wavelengths for optical branching.*
16 *The WSS enables optical branching to multiple different optical paths, in addition to facilitating*
17 *local add/drop of individual wavelengths. See Id.*

18 Denied.

19 75. *The WSS includes a spatial array of individually and continuously controllable*
20 *channel micromirrors, including MEMs and LCoS channel micromirrors, positioned such that each*
21 *channel micromirror receives a spectral channels. The channel micromirrors are pivotal about two*
22 *axes and are individually and continuously controllable to reflect corresponding received spectral*
23 *channels into any selected ones of the fiber collimator output ports and to control the power of the*
24 *received spectral channels coupled into the fiber collimator output ports. See Id.*

25 Denied.

26 76. *The Cisco WSS includes a multiwavelength fiber collimator input port. A grating is*
27 *used to separate the wavelengths, and each wavelength is directed onto its own moveable mirror or*
28

1 *beam deflecting element. This allows automatic power management of each wavelength and*
2 *switching of individual wavelengths to selected fiber collimator output ports. The WSS also works in*
3 *reverse to direct separate input signals of different wavelengths to a common fiber collimator port.*
4 *See e.g. [citation omitted].*

5 Denied.

6 77. *Cisco also directly infringes other claims of the '906 patent.*

7 Denied.

8 78. *On information and belief, use of the Accused Instrumentalities results in*
9 *infringement of the claims of the '906 patent.*

10 Denied.

11 79. *Cisco's affirmative acts of making, using, selling, offering for sale, and/or importing*
12 *the Accused Instrumentalities have induced and continue to induce users of the Accused*
13 *Instrumentalities to use the Accused Instrumentalities in their normal and customary way to infringe*
14 *the claims of the '906 patent.*

15 Denied.

16 80. *On information and belief, at least as of the filing of this Complaint and likely earlier*
17 *as set forth above, Cisco knew of the '906 patent, and knew that its activities would lead to*
18 *infringement of the patent by its customers and end users*

19 Denied.

20 81. *For example, Cisco sells the Accused Instrumentalities to customers and end users*
21 *with the intent that such customers and end users will use the Accused Instrumentalities in such a*
22 *way to constitute direct infringement of at least Claim 68 of the '906 patent as set forth above.*

23 Denied.

24 82. *For example, Cisco explains to customers the individual modules that are available*
25 *to customers as well as standard and custom configurations. See Id*

26 Denied.

1 83. *Cisco performed the acts that constitute induced infringement, and would induce*
2 *actual infringement, with the knowledge of the '906 patent and its claims and with the knowledge, or*
3 *willful blindness to the probability, that the induced acts would constitute infringement.*

4 Denied.

5 84. *On information and belief, Cisco engaged in such inducement to promote the sales of*
6 *the Accused Instrumentalities, e.g., through Cisco's user manuals, product support, marketing*
7 *materials, demonstrations, installation support, and training materials to actively induce the users of*
8 *the accused products to infringe the '906 patent.*

9 Denied.

10 85. *Accordingly, Cisco has induced and continues to induce end users of the accused*
11 *products to use the accused products in their ordinary and customary way with compatible systems*
12 *to make and/or use systems infringing the '906 patent, knowing that such use of the Accused*
13 *Instrumentalities with compatible systems will result in infringement of the '906 patent. Accordingly,*
14 *Cisco has been and currently is inducing infringement of the '906 patent in violation of 35 U.S.C. §*
15 *271(b).*

16 Denied.

17 86. *Cisco has also contributorily infringed and continues to contribute to infringement of*
18 *claims of the '906 patent by selling and offering to sell, offering to commercially distribute,*
19 *commercially distributing, making, and/or importing the Accused Instrumentalities, which are used*
20 *in practicing the process, or using the systems, claimed by the '906 patent, knowing the Accused*
21 *Instrumentalities to be especially made or especially adapted for use in an infringement of the '906*
22 *patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use.*

23 Denied.

24 87. *On information and belief, at least as of the filing of this Complaint and likely earlier*
25 *as set forth above, Cisco knew of the '906 patent, and knew that its activities would lead to*
26 *infringement of the patent by its customers and end users.*

27 Denied.

1 88. *Cisco knows the modules in the Accused Instrumentalities to be especially made or*
2 *especially adapted for use in infringement of the '906 patent, not a staple article, and not a*
3 *commodity of commerce suitable for substantial noninfringing use. For example, the ordinary way*
4 *of using the Accused Instrumentalities infringes the patent claims, and as such, is especially adapted*
5 *for use in infringement. Accordingly, Cisco has been, and currently is, contributorily infringing the*
6 *'906 patent, in violation of 35 U.S.C. § 271(c).*

7 Denied.

8 89. *Capella has suffered and will continue to suffer damage as a result of Cisco's*
9 *infringement of the '906 patent in an amount to be proven at trial.*

10 Denied.

11 90. *Upon information and belief, Cisco did not have and could not have had a reasonable*
12 *belief that the Accused Instrumentalities did not infringe the Asserted Patents. Any manufacturing,*
13 *sales, offers for sale, uses, or importation by Defendants of the Infringing Products reflects a*
14 *deliberate and knowing decision to infringe the '906 patent or, at the very least, a reckless disregard*
15 *of Capella's patent rights. By its prior action, Capella made known to Cisco that Cisco's activities in*
16 *making using, offering for sale, selling and/or importing into the United States the Infringing*
17 *Products and Accused Instrumentalities constituted a sufficient risk of infringement that Cisco*
18 *should have ceased those activities. Under the circumstances, Cisco knew or should have known the*
19 *risk of infringement caused by Cisco's activities related to the Accused Instrumentalities. Despite*
20 *Cisco's knowledge, Cisco intentionally ignored or recklessly disregarded the risk that its activities*
21 *infringed the Asserted Patents. Cisco's conduct manifested deliberate or reckless disregard of*
22 *Capella's rights in the Asserted Patents and was malicious, flagrant and in bad faith.*

23 Denied.

24 91. *Cisco's manufacturing, sales, offers for sale, uses, or importation of the Infringing*
25 *Products has been willful, and Capella is entitled to treble damages and attorneys' fees and costs*
26 *incurred in this action, along with prejudgment interest under 35 U.S.C. §§ 284 & 285. Cisco will*
27 *continue to infringe the '906 patent unless and until it is enjoined by this Court.*

1 Denied.

2 92. *Cisco's acts of infringement have caused and will continue to cause irreparable harm*
 3 *to Capella unless and until Cisco is enjoined by this Court.*

4 Denied.

5 **EXCEPTIONAL CASE**

6 93. *The allegations contained in paragraphs 1-92 above are repeated and realleged as if*
 7 *fully set forth herein*

8 The above paragraph does not contain any allegation of fact, and, therefore, no answer is
 9 required.

10 94. *Based on, among other things, the facts alleged in the paragraphs above, including*
 11 *Defendants' intentional use of the Asserted Patents, Defendants' knowledge of its infringement, and*
 12 *Defendants' continued direct and/or indirect infringement, this case is exceptional under 35 U.S.C.*
 13 *§ 285, and Capella is entitled to its reasonable costs and expenses of litigation*

14 Denied.

15 **CAPELLA'S REQUEST FOR RELIEF**

16 *WHEREFORE, Capella respectfully requests that this Court enter:*

17 *a. A Judgment in favor of Capella that Cisco has infringed, either literally and/or under the*
 18 *doctrine of equivalents, the '905 patent and the '906 patent;*

19 *b. An order enjoining Cisco from further acts of infringement of the Asserted Patents;*

20 *c. A judgment and order requiring Cisco to pay Capella its damages, costs, expenses, and*
 21 *prejudgment and post-judgment interest for its infringement of the Asserted Patents, as provided*
 22 *under 35 U.S.C. § 284; and, if necessary to compensate Capella for Cisco's infringement*
 23 *adequately, an accounting;*

24 *d. Awarding increased damages for Defendants' willful infringement;*

25 *e. Declaring that this case is exceptional under 35 U.S.C. § 285 and awarding Capella its*
 26 *reasonable costs and expenses of litigation, including attorneys' and experts' fees; and*
 27
 28

THIRD DEFENSE

(Failure to Provide Notice)

3. Under 35 U.S.C. § 287, Capella is precluded from seeking damages for any and all alleged infringement prior to the date of notice of any alleged infringement.

FOURTH DEFENSE

(Laches / Estoppel / Waiver)

4. Capella cannot recover any damages from Cisco for alleged infringement of the Asserted Patents due to laches, estoppel, and/or waiver.

FIFTH DEFENSE

(License / Patent Exhaustion)

5. To the extent that Capella has granted any of Cisco's suppliers a license under the Asserted Patents, or to the extent any of Cisco's suppliers otherwise have a license under the Asserted Patents, the relief sought by Capella in relation to the Asserted Patents is barred by license and/or under the doctrine of patent exhaustion.

SIXTH DEFENSE

(Prosecution History Estoppel)

6. Capella is barred by the doctrine of prosecution history estoppel from asserting disclaimed claim constructions or alleging causes of action for infringement of the Asserted Patents in light of arguments and amendments made to obtain allowance of the applications that issued as the Asserted Patents.

SEVENTH DEFENSE

(Prosecution Laches)

7. Capella is barred by the doctrine of prosecution laches from asserting the Asserted Patents against Cisco, as Capella unreasonably and unexplainably delayed prosecuting the patent applications that lead to the Asserted Patents.

EIGHTH DEFENSE

(Unenforceability Due To Inequitable Conduct)

8. The '905 and '906 patents are each unenforceable due to inequitable conduct in the procurement of the predecessor '368 and '678 Patents, the relevant facts and circumstances of which are set forth below. The '905 and '906 Patents are unenforceable as a result of inequitable conduct by Capella's CEO, Larry Schwerin, and Barry N. Young, Esq., as well as possibly the other applicant(s), their attorney(s), and/or their agent(s) and/or other person(s) involved in the preparation and/or prosecution of the predecessor '368 and '678 Patents and related patent applications (collectively with Mr. Schwerin and Mr. Young, the "Applicants"). Each of the Applicants was subject to the duty of disclosure under 37 C.F.R. § 1.56.

9. To properly plead inequitable conduct, there are three elements that must be shown: (1) a knowing misrepresentation of facts, failure to disclose information, or submission of false information, (2) materiality of the facts or information, and (3) intent to deceive the Patent Office. *Delano Farms Co. v. Cal. Table Grape Comm'n*, 655 F.3d 1337, 1350 (Fed. Cir. 2011); *Exergen Corp. v. Wal-Mart Stores, Inc.*, 575 F.3d 1312, 1327 (Fed. Cir. 2009). The party must state with particularity the circumstances constituting fraud or mistake, but "[m]alice, intent, knowledge, and other conditions of a person's mind may be alleged generally." Fed. R. Civ. P. 9(b). While allegations of fraud based on information and belief usually do not satisfy the particularity requirements under Rule 9(b), "the rule may be relaxed as to matters within the opposing party's knowledge." *Moore v. Kayport Package Exp., Inc.*, 885 F.2d 531, 540 (9th Cir. 1989).

10. Cisco alleges that said inequitable conduct comprised intentional misrepresentations and/or omissions including, without limitation, the failure to disclose one or more references during prosecution in breach of the duty of candor and good faith required by 37 C.F.R. § 1.56, with the intent to deceive the Examiner. Specifically, and as pled in additional detail in the subsequent paragraphs of this defense, CEO Larry Schwerin, prosecuting attorney Barry N. Young, as well as possibly other Applicants, were aware of highly-relevant art that the Patent Office had previously used to reject claims in other Capella patent applications similar to the '905 and '906 Patents and to

the predecessor '368 and '678 Patents cancelled as a result of the grant of the '905 and '906 Patents. An example of this art – U.S. Patent No. 6,798,941 (the “Smith patent”) and U.S. Patent Publication No. 2002/0071627 (the “Smith application”) – claims priority to September 2000 and is thus prior art to both '905 and '906 Patents and to the predecessor '368 and '678 Patents.

11. The PTAB relied on Smith patent combinations in finding claims 1-6, 9-13, and 15-22 of the predecessor '368 Patent and claims 1-4, 9, 10, 13, 17, 19-23, 27, 29, 44-46, 53, and 61-65 of the predecessor '678 Patent (all challenged claims) invalid in the *Cisco Systems, Inc., Ciena Corp., Coriant Ops., Inc., Coriant (USA) Inc., and Fujitsu Network Communications, Inc. v. Capella Photonics, Inc.*, Case Nos. IPR2014-01166, -01276 cases. The Federal Circuit affirmed the PTAB's findings, and the determination is now final and non-appealable, confirming the reference's materiality to the now-invalid claims.

12. The Smith patent and application explicitly disclosed (1) 2-dimensional (e.g., two-axis) control of micromirrors; and (2) power control using those mirrors. Capella's patent attorneys acknowledged that the Smith patent disclosed these features during the prosecution of other Capella patents, such as U.S. Patent No. 7,352,927 (“'927 patent”) discussed below. This art is highly relevant because the Applicants relied solely on the same two features (2-D mirrors and power control) to attempt to overcome prior art during the prosecution of the predecessor '368 and '678 Patents. Despite this acknowledgement, the Applicants sought and obtained reissued claims of the predecessor '368 and '678 Patents based on their representation to the Patent Office that those claims were patentable due to narrowing amendments that added nothing more than 2-D mirror control and power control.

13. While the Applicants did disclose the Smith patent during the reissue proceedings for the '905 and '906 patents, the Applicants did not disclose to the Patent Office that the predecessor '368 and '678 Patents were subject to an inequitable conduct claim based on the Smith patent in the *Capella Photonics, Inc. v. Tellabs, Inc.*, Case No. 14-cv-03350 (N.D. Cal.); *Capella Photonics, Inc. v. Fujitsu Network Communications, Inc.*, Case No. 14-cv-03349 (N.D. Cal.); *Capella Photonics, Inc. v. Ciena Corp.*, Case No. 14-cv-03351 (N.D. Cal.); and *Capella Photonics, Inc. v. Cisco*

1 *Systems, Inc.*, Case No. 14-cv-03348 (N.D. Cal.) cases. Furthermore, inequitable conduct cannot be
2 cured by reissue and can impact related patents and applications. *Therasense, Inc. v. Becton,*
3 *Dickinson and Co.*, 649 F. 3d 1276, 1288-89 (Fed. Cir. 2011) (citations omitted). Applicants also did
4 not attempt to cure their inequitable conduct by seeking examination of the predecessor '368 and
5 '678 Patents under 35 U.S.C. § 257.

6 14. In addition, there is ample evidence that the Applicants concealed the information
7 about the Smith patent and application from the Patent Office with intent to deceive the Patent
8 Office during the prosecution of the predecessor '368 and '678 Patents. This is apparent from at least
9 three additional acts by the Applicants. First, Patent Office rules and regulations required Applicants
10 to identify the nature of the "mistake" forming the legal basis to reissue the predecessor '368 and
11 '678 Patents. *E.g.*, 37 CFR 1.175(a)(1). Larry Schwerin, Barry N. Young, as well as possibly other
12 Applicants concealed and then misrepresented this "mistake" in at least two ways. As discussed
13 below, initially, the Applicants tried to avoid admitting that the patents that preceded the predecessor
14 '368 and '678 Patents were invalid, and also tried to avoid identifying the invalidating prior art.
15 Subsequently, after they were forced to admit the patents that preceded the predecessor '368 and
16 '678 Patents were invalid, the Applicants still failed to disclose the full extent of that "mistake."
17 Instead, as a basis for the "mistake," Applicants pointed the Patent Office to a single reference that it
18 argued lacked the allegedly-novel features in the amended claim limitations. At the same time,
19 Applicants failed to identify more relevant prior art that they were aware of, and that disclosed one
20 or more of those allegedly-novel limitations.

21 15. Further demonstrating Applicants' intent to deceive, during Capella's prosecution of
22 the predecessor '368 and '678 Patents, Cappella exploited its earlier failure to disclose the full scope
23 of the prior art. As discussed below, first, when Capella filed its original provisional application (to
24 which it later claimed priority), Capella included a picture of a commercially available mirror that
25 was controllable in 2-D and admitted it was prior art. Next, when Capella filed the non-provisional
26 application, it excised any mention of these 2-D mirrors or the fact they were prior art. Finally,
27 Capella then took advantage of the fact that the Patent Office Examiner would have been unlikely to
28

1 review the ten-year-old provisional application. It did so by arguing for the patentability of the
2 reissued claims because Capella had narrowed them to include 2-D mirror control, while at the same
3 time pointing to a single prior art reference that arguably lacked 2-D control.

4 16. Further demonstrating Applicants' intent to deceive the Patent Office is the handling
5 of the Smith references during the prosecution of the current Asserted Patents. While Applicants
6 disclosed the material Smith patent to the Patent Office during the prosecution of the '905 and '906
7 patents, the Applicants chose to not disclose the inequitable conduct challenge that had been made
8 against the predecessor '368 and '678 Patents in view of the Smith references – concealing the prior
9 acts that render the entire patent family, including the '905 and '906 Patents, unenforceable.
10 *Therasense, Inc. v. Becton, Dickinson and Co.*, 649 F. 3d 1276, 1288-89 (Fed. Cir. 2011). Applicants
11 also did not attempt to cure their inequitable conduct by seeking examination of the predecessor '368
12 and '678 Patents under 35 U.S.C. § 257.

13 17. On or about December 29, 2004, named inventor Joseph E. Davis signed a
14 declaration in support of a reissue of U.S. Patent No. 6,625,346. That reissue – RE39,397 – became
15 the parent patent to the '678 Patent (which was then subsequently reissued at the '906 Patent). Mr.
16 Davis declared that he was an inventor of the '346 patent, and that the '346 patent had incorrectly
17 failed to name him as such. At the time, Mr. Davis was President and CEO of Capella. On
18 November 14, 2006, the PTO reissued the '346 patent as RE39,397. Thus, Joseph Davis was
19 substantively involved in the prosecution of Capella's patents at least as early as 2004.

20 18. In or about 2005, Larry Schwerin replaced Joseph Davis as CEO of Capella. Larry
21 Schwerin was involved in the prosecution of Capella's patents.

22 19. On or about August 8, 2006, a PTO examiner cited the Smith application during the
23 prosecution of another Capella patent, U.S. Patent No. 7,263,253 ("253 patent"). Joseph Davis, a
24 purported inventor of the predecessor '368 and '678 Patents and the '905 and '906 Patents, was also
25 a named inventor on the '253 patent.

26 20. On or about January 4, 2007, a PTO examiner cited the Smith patent during the
27 prosecution of another Capella patent, the '927 patent. Joseph Davis, the inventor the '905 and '906
28

1 Patents, and the predecessor '368 and '678 Patents, was also a named inventor on the '927 patent.
2 The Examiner (who was a different examiner than the person examining the predecessor '368 and
3 '678 Patents) rejected the majority of the claims of the '927 patent based on a combination of the
4 Smith patent and one or more other references. Rejected claim 1 of the '927 patent recited mirrors
5 rotatable in both a "switching axis" as well as an "attenuation axis" to control power.

6 21. On or about September 18, 2007, the Smith patent was cited by the Applicants in an
7 IDS during the prosecution of another Capella patent, U.S. Patent No. 7,362,930 ("930 patent").
8 Joseph Davis, a purported inventor of the predecessor '368 and '678 Patents and the '905 and '906
9 Patents, was also a named inventor on the '930 patent.

10 22. On or about September 18, 2007, the Smith patent was cited by the Applicants in an
11 IDS during the prosecution of another Capella patent, U.S. Patent No. 7,567,756 ("756 patent").

12 23. On or about September 26, 2007, the Smith patent was cited by the Applicants in an
13 IDS during the prosecution of another Capella patent, U.S. Patent No. 7,346,234 ("234 patent").
14 Joseph Davis, a purported inventor of the predecessor '368 and '678 Patents and the '905 and '906
15 Patents, was also a named inventor on the '234 patent.

16 24. As a named inventor of the predecessor '368 and '678 Patents (and the '905 and '906
17 Patents), Joseph Davis was involved in the prosecution of those patents. In addition, on or near
18 March 16, 2007, Joseph Davis's involvement in the prosecution of Capella's patents continued when
19 Mr. Davis signed a § 1.131 declaration to swear behind a prior art reference that the Examiner had
20 cited together with the Smith patent in the prosecution of the '927 patent. Thus, Mr. Davis was
21 aware of the Smith patent, the Smith application, and their disclosures at least as early as 2007.

22 25. The reissue applications that lead to the '368 and '678 patents were filed on June 15,
23 2010. Yet, despite Capella's and Mr. Davis's awareness of the Smith application no later than
24 August 2006 and awareness of the Smith patent no later than January 2007, and Capella's disclosure
25 of the Smith patent during the prosecution of the '830, '756, and '234 patents in September 2007,
26 Capella never disclosed the Smith patent or the Smith application during the prosecution of the
27 predecessor '368 and '678 Patents.
28

26. The Smith patent and the Smith application are material prior art to the claims of the predecessor '368 and '678 Patents. At least claim 1 of the '368 Patent and claim 61 of the '678 Patent are anticipated by the Smith patent and the Smith application. As discussed in the following paragraphs, this is shown by the fact that the Patent Office asserted (and Capella did not deny) that the Smith patent disclosed each and every one of the limitations of claim 1 of the '927 patent, and because claim 1 of the '368 Patent and claim 61 of the '678 Patent recite the same or similar limitations as claim 1 the '927 patent. The materiality of the Smith patent was confirmed by the PTAB's ruling that the Smith patent in combination with other references rendered obvious claims 1-6, 9-13, and 15-22 of the predecessor '368 Patent and claims 1-4, 9, 10, 13, 17, 19-23, 27, 29, 44-46, 53, and 61-65 of the predecessor '678 Patent in the *Cisco Systems, Inc., Ciena Corp., Coriant Ops., Inc., Coriant (USA) Inc., and Fujitsu Network Communications, Inc. v. Capella Photonics, Inc.*, Case Nos. IPR2014-01166, -01276 *inter partes* reviews – holdings that the Federal Circuit affirmed and that are final and non-appealable.

27. Claim 1 of the '927 patent, which was rejected based on the Smith patent, was narrower than claim 1 of the predecessor '368 Patent. As shown by the color coding below, the main differences between claim 1 of the '927 patent and claim 1 of the predecessor '368 Patent were that claim 1 of the '927 patent included two limitations that claim 1 of the predecessor '368 Patent lacked—(1) an optical beam expander and relay system; and (2) reducing a non-uniform attenuation of passband due to the diffraction from the edges of the micro-mirrors.

Predecessor Patent RE42,368 Claim 1:	Rejected '927 Patent Claim 1:
<p>1. An optical add-drop apparatus comprising an input port for an input multi-wavelength optical signal having first spectral channels;</p> <p>one or more other ports for second spectral channels;</p> <p>an output port for an output multiwavelength optical signal;</p> <p>a wavelength-selective device for spatially separating said spectral channels; [and]</p>	<p>1. Optical apparatus for switching multichannel optical signals having spectral channels of different wavelengths, comprising:</p> <p>a plurality of input and output ports for optical signals having one or more of said spectral channels;</p> <p>an optical beam expander [sic: expander] and relay system adapted to receive the optical signals from one or more of the input ports, the anamorphic system being formed to convert the optical signals to spectral beams having a</p>

a spatial array of beam-deflecting elements positioned such that each element receives a corresponding one of said spectral channels,

each of said elements being individually and continuously controllable in two dimensions to reflect its corresponding spectral channel to a selected one of said ports and to control the power of the spectral channel reflected to said selected port.

predetermined elongated beam profile;

a wavelength separator for spatially separating the spectral beams into constituent spectral channels;

and an array of channel micromirrors, each channel micromirror of the array being positioned to receive one of said constituent spectral channels, the micromirrors being rotatable about a switching axis to switch said one spectral channel to a selected output port;

wherein each channel micromirror is rotatable about an attenuation axis to vary the coupling of the switched spectral channel to the selected output port to control a power level of the spectral channel output at such selected port, wherein the attenuation axis is different from the switching axis,

wherein the channel micromirrors and/or the input or output ports and/or wavelength separator are configured to reduce a nonuniform attenuation of a passband of the apparatus due to diffraction of a spectral beam from an edge of one or more of the micromirrors, wherein the edge is substantially parallel to the attenuation axis.

28. For similar reasons, claim 1 of the '927 patent was also narrower than at least claim 61 of the predecessor '678 Patent.

29. As the Examiner would later confirm, the Smith patent disclosed every element of claim 1 of the '927 patent except the last limitation of reducing a non-uniform attenuation of passband – a limitation the claims of the predecessor '368 and '678 Patents lacked. The applicants for the '927 application did not deny this, but instead argued that it would not have been obvious to combine the Smith patent with other references. Accordingly, the Smith patent also disclosed every claim element of at least claim 1 of the predecessor '368 Patent. Specifically, the Smith patent disclosed:

- a) An optical add-drop apparatus comprising an input port for an input multiwavelength optical signal having first spectral channels;
- b) one or more other ports for second spectral channels;
- c) an output port for an output multi-wavelength optical signal;
- d) a wavelength-selective device for spatially separating said spectral channels;
- e) a spatial array of beam-deflecting elements positioned such that each element receives a corresponding one of said spectral channels,
- f) each of said elements being individually and continuously controllable in two dimensions to reflect its corresponding spectral channel to a selected one of said ports and to control the power of the spectral channel reflected to said selected port.

30. The provisional patent application on which the Smith patent and the Smith application are based (Provisional Application No. 60/234,683) shows that the priority date of the Smith patent and Smith application is September 22, 2000 – at least with respect to the disclosure of (1) 2-dimensional (e.g., two-axis) control of micromirrors; and (2) power control. This priority date makes the Smith patent and Smith application prior art to all of the '905 and '906 Patents and their predecessor '368 and '678 Patents. The Smith patent lists the '683 provisional application and the filing date of that provisional application on its first page. The first paragraph in the Smith patent's specification claims priority to the '683 provisional application. The PTAB held that the Smith patent was entitled to a priority date of September 22, 2000 based on the provisional application, and the Federal Circuit affirmed that ruling.

31. The '683 provisional Smith application also shows that Capella knew that the Smith patent and the Smith application were prior art that was directed at the same invention that Capella later claimed in the predecessor '368 and '678 Patents. Specifically, the '683 provisional application included the following disclosure (emphasis added):

According to a preferred embodiment of the invention, the optical throughput of each wavelength channel may be controlled by using a mirror array with *elements that can be rotated in an analog fashion about two orthogonal axes*. Angular

1 displacement in a first, switching plane, is used to perform an OXC, ADM or other
2 switching function while ***angular displacement about the orthogonal axis is used***
3 ***for power control.***

4 32. The non-provisional Smith patent and the Smith application that claimed priority to
5 the '683 provisional also disclosed these features. For example, the Abstract of the Smith patent
6 and the Smith application disclosed (emphasis added):

7 A multi-wavelength or white-light optical switch including an array of ***mirrors***
8 ***tiltable about two axes, both to control the switching and to provide variable***
9 ***power transmission*** through the switch, both for optimization and for power
10 equalization between wavelength channels in a multi wavelength signal.

11 33. On or about March 23, 2007, Capella's patent attorney – Joshua D. Isenberg – filed
12 a response to the January 4, 2007 Office Action for the '927 patent, admitting that the Smith patent
13 “describes a bi-axial MEMS mirror design that has a frame within a frame,” and noting that the
14 Smith patent described a MEMs mirror that could both be “rotated about the switching axis so as to
15 point at the output port of interest” and that could also be “rotated about the attenuation axis to
16 attenuate the power of that particular optical wavelength.” At least Mr. Davis and Mr. Schwerin,
17 and possibly other Applicants, were aware of this statement.

18 34. On or about June 20, 2007, the Examiner of the '927 patent again rejected the
19 majority of the claims of that patent using the Smith patent in combination with one or more other
20 references. The Examiner stated that “Smith discloses a multi-channel optical switch the structure
21 of which discloses all of the limitations of claims 1 and 29 except for the specific limitation
22 reducing a non-uniform attenuation of passband due to the diffraction from the edges of the micro-
23 mirrors.” At least Mr. Davis and Mr. Schwerin, and possibly other Applicants, were aware of this
24 statement.

25 35. On or about August 14, 2007, Capella attorney Mr. Isenberg filed another response.
26 That response did not deny the Examiner's statement quoted in the preceding paragraph. Capella's
27 response also acknowledged that “Smith's micromirrors allow for a continuous range of angles of
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1 deflection using relatively compact mirrors that can be grouped in two-dimensional arrays.”

2 36. Notably, on information and belief, at or about the time Capella filed the reissue
3 applications that became the predecessor ’368 and ’678 Patents, Capella was actively trying to sell
4 its patent portfolio (including the pre-reissue versions of the predecessor ’368 and ’678 Patents),
5 and was likely trying to increase the perceived value of that portfolio and/or prepare it for litigation.
6 Executives at Capella, including Larry Schwerin, would have known that the sale value of the
7 company would be based heavily on the value of its patent portfolio.

8 37. On or about June 10, 2010, Capella sought reissue of U.S. Patent Nos. RE39,397
9 and 6,879,750 that eventually reissued as the predecessor ’368 and ’678 Patents. As part of its
10 application for reissue of the ’750 patent, on or about March 1, 2011, Capella’s CEO Larry
11 Schwerin stated that the ’750 patent was invalid and needed to be reissued. The only two bases
12 provided by Mr. Schwerin for the reissues were that claim 1 was overbroad and invalid by failing to
13 include limitations related to (1) 2-dimensional (e.g., two-axis) control of micromirrors; and (2)
14 power control (emphasis added):

15 *At least one error upon which reissue is based is* described as follows: Claim 1 is
16 deemed to be too broad and invalid in view of U.S. Patent No. 6,498,872 to
17 Bouevitch and further in view of one or more of U.S. Patent No. 6,567,574 to Ma,
18 U.S. Patent No. 6,256,430 to Jin, or U.S. Patent No. 6,631,222 to Wagener *by*
19 *failing to include limitations regarding the spatial array of beam deflecting*
20 *elements being individually and continuously controllable in two dimensions to*
21 *control the power of the spectral channels* reflected to selected output ports, as
22 indicated by the amendments to Claim 1 in the Preliminary Amendment referred to
23 above.

24 38. As part of Capella’s application for reissue of the RE39,397 patent, on or about
25 December 2, 2010, Larry Schwerin made a similar representation (to that cited in the previous
26 paragraph) regarding the reason that he claimed the RE39,397 patent was invalid.

27 39. By making these statements, Capella (through the Applicants) only identified (1) 2-
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1 D mirror control; and (2) power control as allegedly novel aspects of the predecessor '368 and '678
2 Patents over the prior art for the amended claims.

3 40. Applicants then amended the claims of the predecessor '368 and '678 Patents,
4 effectively narrowing all 22 claims of the predecessor '368 Patent, and all but 23 of 67 claims of
5 the predecessor '678 Patent. The amendments were generally directed at two narrowing limitations:
6 (1) 2-D mirror control; and (2) power control.

7 41. Despite this, by that time in 2010, Larry Schwerin, Barry N. Young, as well as
8 possibly other Applicants such as Joseph Davis, were aware of the Smith patent and the Smith
9 application, knew that the Smith patent and the Smith application disclosed beam-deflecting
10 elements that were continuously controllable in two dimensions to control power, and failed to
11 disclose those facts to the Examiner of the reissue applications. Schwerin, Young, and possibly
12 other applicants such as Davis, were aware of the '683 provisional and its contents. This is because
13 the Smith patent lists on its face the '683 provisional and the filing date of that provisional, and
14 because the first paragraph in the Smith references' specification claims priority to the '683
15 provisional application.

16 42. The information about the existence and disclosure of the Smith patent and the
17 Smith application is "but-for" material information that should have been disclosed to the Patent
18 Office during the prosecution of applications that became the predecessor '368 and '678 Patents.
19 The Examiner's reasons for allowance of both of the predecessor '368 and '678 Patents included a
20 statement that the then-cited prior art "does not teach or suggest using channel micromirrors which
21 are both individually and continuously controllable to reflect received spectral channels to any one
22 of the output ports and to control the power of the received spectral channels coupled to the output
23 ports."

24 43. The Smith patent and the Smith application are prior art that is "but-for material"
25 because the Patent Office would not have allowed one or more claims of each of the predecessor
26 '368 and '678 Patents had it been aware of the undisclosed Smith patent and the fact that the Smith
27 patent disclosed both 2-axis mirrors and power control. Those were the sole stated limitations on
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1 which the Examiner of the predecessor '368 and '678 Patents allowed all of the claims of the '368
2 patents and claims 2-20 and 44-67 of the '678 patent. The but-for materiality was confirmed by the
3 PTAB in the *Cisco Systems, Inc., Ciena Corp., Coriant Ops., Inc., Coriant (USA) Inc., and Fujitsu*
4 *Network Communications, Inc. v. Capella Photonics, Inc.*, Case Nos. IPR2014-01166, -01276 IPRs
5 when it held that claims 1-6, 9-13, and 15-22 of the predecessor '368 Patent and claims 1-4, 9, 10,
6 13, 17, 19-23, 27, 29, 44-46, 53, and 61-65 of the predecessor '678 Patent were invalid because the
7 Smith reference in combination with other references rendered the challenged claims obvious. The
8 PTAB relied upon the Smith patent for the two-axis mirror and power control limitations. The
9 Federal Circuit affirmed the PTAB's findings.

10 44. Larry Schwerin, Barry N. Young, as well as possibly other Applicants, concealed
11 the information about the Smith patent from the Patent Office with intent to deceive the Patent
12 Office. One or more of the Applicants stood to profit more from selling off a company with a patent
13 portfolio that was perceived to be relatively stronger due to the reissues.

14 45. Mr. Schwerin and Mr. Young also represented to the Patent Office that what
15 became claim 1 of each of the predecessor '368 and '678 Patents was patentable over the prior art
16 because of the narrowing amendments regarding 2-axis mirrors and power control. Specifically,
17 Applicants stated for both of the predecessor '368 and '678 Patents that the "amendments correct
18 errors and ensure that the amended claims distinguish over the prior art."

19 46. Applicants, however, did not tell the Patent Office that the Smith patent and
20 application disclosed both of the two sole alleged points of novelty in the amended claims. Larry
21 Schwerin, Barry N. Young, as well as possibly other Applicants, knew that the statement that the
22 amended claims distinguished over the prior art was a misrepresentation, because they knew the
23 Smith patent and the Smith application anticipated both of those claims.

24 47. As alleged above, Schwerin, Young, as well as possibly other Applicants, and
25 others associated with the prosecution of the predecessor '368 and '678 Patents, systematically
26 withheld or obfuscated the relevance of the known prior art. The single most likely explanation for
27 these acts is that they were done with an intent to deceive the Patent Office and obtain patents that
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1 could be enforced against Cisco and others.

2 48. But there is still further conduct that shows Capella's specific intent to deceive the
3 PTO.

4 49. Capella's attempt to hide the true nature of the "mistake" on which it based the
5 reissues of the predecessor '368 and '678 Patents. Capella attempted to hide its "mistake" at two
6 different points in the prosecution of the predecessor '368 and '678 Patents. Specifically, Capella
7 began the process of asking the Patent Office to reissue the predecessor '368 and '678 Patents
8 through the following sequence of events, which are pled in more detail below:

- 9 a) First, Larry Schwerin, Barry N. Young, as well as possibly other Applicants,
10 attempted to avoid saying anything definitive about the "mistake" in the patents, and
11 tried to avoid identifying problematic prior art.
12 b) Second, when forced to put something on record, Applicants failed to disclose the
13 full extent of the "mistake." Instead, they chose to disclose only some of the weaker
14 prior art references (over which their proposed claim limitations more easily
15 distinguished), and then disguised the deception using language such as "at least one
16 error upon which reissue is based is...."

17 50. At the time of filing its reissue applications for the predecessor '368 and '678
18 Patents, the Applicants tried to avoid admitting that the patent was invalid and to avoid disclosing
19 relevant prior art despite being required to do so by the Patent Office's rules. (See 37 CFR
20 1.175(a)(1) and MPEP § 1414.) Instead, Mr. Schwerin initially provided only the following
21 statement in a "Reissue Application Declaration by the Assignee": "Claims 1, 15, 16 and 17 *may*
22 *have* claimed more than there was a right to claim in view of the cited prior art." (emphasis added.)

23 51. The Examiner responded by noting that Capella failed to specifically say whether
24 the claims were overbroad and also failed to identify even one specific error (or specific prior art)
25 to support the reissue application (February 15, 2011, Office Action, predecessor '368 Patent)
26 (emphasis added):

27 This recitation does not include any specific language pointed out in at least one of
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1 the independent claims which provides the basis for reissue. *The phrase “may have*
2 *claimed more” also lacks sufficient specificity because it is left to the reader to*
3 *determine if the claimed subject matter “may have claimed more” in view of the*
4 *cited art, which is also not identified*, which is a task which lends itself to guessing
5 or trail [sic] and error as to what claim language is too broad. Applicant must
6 identify at least one specific piece of prior art (or combination of references) in
7 order to specifically state at least one error.

8 52. The Examiner also noted that “[i]n addition, the oath or declaration, as filed, was
9 printed on paper which needed toner and as a result the oath or declaration is faded and partially
10 illegible.”

11 53. Only after the Examiner’s rejection of the original Reissue Application
12 Declarations did Applicants file a “Replacement Reissue Application Declaration by Assignee” for
13 each of the predecessor ’368 and ’678 Patents. In those declarations, CEO Larry Schwerin stated
14 that “the original Patent [was] wholly or partially inoperative or invalid for the reason that the
15 patentee claimed more than he had a right to claim in the Patent.”

16 54. Only after the Examiner’s rejection of the Declarations did the Applicants disclose
17 to the Patent Office that Claim 1 of each patent to be reissued was “too broad and invalid in view of
18 U.S. Patent No. 6,498,872 to Bouevitch....” Even then, the Applicants hedged this language by
19 noting that the problem with the Bouevitch patent was only one of possibly other errors for which
20 Applicants sought reissue.

21 55. Despite this late admission, Larry Schwerin, Barry N. Young, as well as possibly
22 other Applicants, were aware of the real “mistake” and of the Bouevitch patent prior to the first
23 (rejected) reissue application declaration. This awareness is evident from the fact that, when
24 Applicants filed their reissue applications and the initial declarations, the Applicants also filed their
25 amendments to the claims in a way that they could later argue avoided the Bouevitch patent. And
26 there is no question that the Applicants knew of the Bouevitch patent prior to filing the reissue
27 applications: as part of Capella’s reissue applications, Applicants filed an Information Disclosure
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1 Statement (“IDS”) for each reissue which identified the Bouevitch patent.

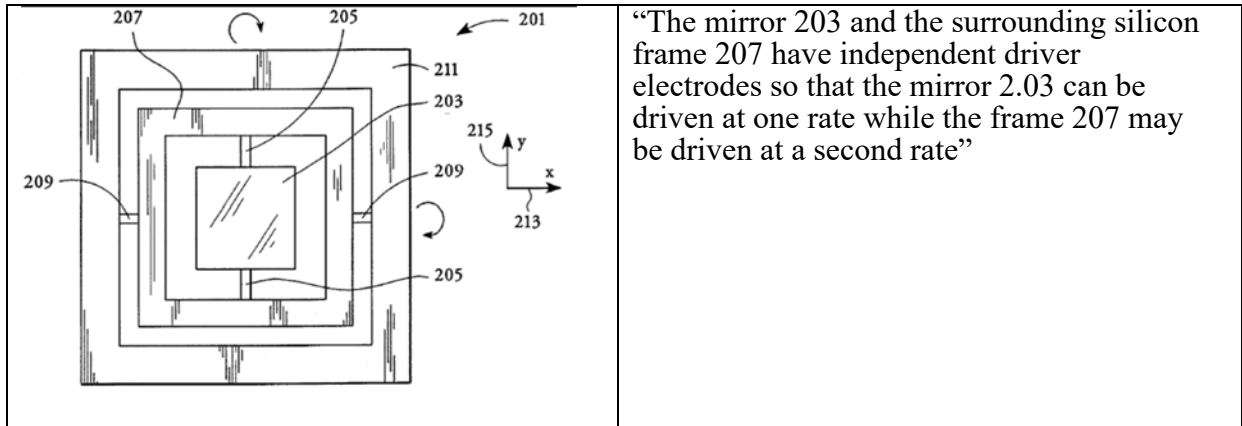
2 56. Although the Bouevitch patent was the reference that Applicants later focused on
3 during the reissue process, Applicants’ original reissue applications gave no notice that Bouevitch
4 was particularly important. The IDS that Applicants filed contained over two dozen references.
5 U.S. Patent No. 6,498,872 to Bouevitch was listed as reference number 7 on the IDS.

6 57. In addition to withholding the true nature of the “mistake” of the invalid, overbroad
7 claims, Applicants also pointed to the Bouevitch patent as a reference that their amendments
8 regarding (1) 2-D mirror control; and (2) power control would more easily overcome, while failing
9 to identify other art that they knew disclosed, for example, a 2-D mirror control (e.g., the Smith
10 patent and the Smith application, discussed above).

11 58. Applicants also represented that the “the amendments [to the reissued claims]
12 correct errors and ensure that the amended claims distinguish over the prior art.” But, while
13 pointing to the Bouevitch patent, they said nothing about the Smith patent or Smith application.

14 59. Applicants also said nothing about another reference with which they were familiar
15 and that clearly disclosed 2-D mirror control – U.S. Patent No. 5,629,790 (the “Neukermans
16 patent”). The Applicants knew of the Neukermans patent because they referenced and
17 (incompletely) characterized its content in the specifications of both of predecessor ’368 and ’678
18 Patents.

19 60. The Neukermans patent clearly disclosed 2-D mirror control, as Applicants would
20 have known, given the Applicants’ description of the Neukermans patent in the specifications of the
21 predecessor ’368 and ’678 Patents (and the ’905 and ’906 Patents). Figure 12a of the Neukermans
22 patent illustrates 2-D mirror 203 and the Neukermans patent states, at Col. 10, lines 17-20, as
23 follows: “The mirror 203 and the surrounding silicon frame 207 have independent driver electrodes
24 so that the mirror 203 can be driven at one rate while the frame 207 may be driven at a second
25 rate.” Neukermans patent at Fig. 12a, 10:17-20:
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27
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61. Despite their awareness of the disclosure of the Neukermans patent, all the Applicants said regarding the Neukermans patent was that “[t]he underlying fabrication techniques for micromachined mirrors and associated actuation mechanisms are well documented in the art, see U.S. Pat. No. 5,629,790 for example.” They failed to tell the Patent Office that the reference disclosed 2-D micromachined mirrors and actuation mechanisms. Given that the Applicants’ validity claim for the reissued patents was based on a distinction between 1-D and 2-D mirrors, this description of the Neukermans patent was a material misrepresentation, further demonstrating the intentional nature of its conduct.

62. Another instance that further shows that Applicants intended to deceive the PTO is that at no time during the prosecution of the predecessor ’368 and ’678 Patents or their parent patents did the Applicants say anything about what they had characterized as a “Prior Art 2-Axis Mirror” (the “Lucent 2-Axis mirror”) in the provisional application to which the predecessor ’368 and ’678 Patents (and the ’905 and ’906 Patents) claim priority. On page 24 of the ’683 provisional application, Applicants stated as follows: “The 2-axis dynamic mirror can take the form of a double-gimbaled torsional mirror. A single-axis torsional mirror is described in Ref. 2, while a two-axis version of such a torsional mirror is described in Ref. 3, and a version developed by Lucent Technologies is shown in Figure 17.” Page 24 of that provisional showed:

Prior Art 2-Axis Mirror



Lucent Technologies
Get Lots Innovations



“The 2-axis dynamic mirror can take the form of a double-gimbaled torsional mirror. A single-axis torsional mirror is described in Ref. 2, while a two-axis version of such a torsional mirror is described in Ref. 3, and a version developed by Lucent Technologies is shown in Figure 17.”

63. Despite acknowledging the Lucent 2-Axis mirror as prior art, Larry Schwerin, Barry N. Young, as well as possibly other Applicants, and others associated with the prosecution of the predecessor '368 and '678 Patents, failed to acknowledge this Lucent technology as 2-Axis mirror prior art in the non-provisional specifications of the predecessor '368 and '678 Patents.

64. By admitting the existence of this art in the provisional application, but then excising it from the non-provisional applications, the Applicants effectively hid this prior art from the Patent Office.

65. The Applicants knowingly took advantage of the fact that – without any reason to do so – the Examiner of the predecessor '368 and '678 Patents would be unlikely to reach back and examine the provisional application that had been filed ten years earlier. Thus, by amending the claims of the predecessor '368 and '678 Patents to claim 2-D mirror controls and then misdirecting the Examiner's attention to the Bouevitch patent that disclosed (arguably) only 1-D mirrors, Larry Schwerin and Barry N. Young, Esq. and possibly other Applicants, purposely omitted information regarding the prior-art 2-D mirrors with an intent to mislead the Patent Office.

66. Applicants also said nothing about another material reference of which they were aware. In particular, Applicants failed to disclose U.S. Patent No. 5,661,591 (the “Lin Patent”) despite their awareness of it. On or about February 23, 2006, a PTO examiner cited the Lin patent during the prosecution of another Capella patent, U.S. Patent No. 7,209,274 (“’274 patent”). Joseph

1 Davis, a purported inventor of the predecessor '368 and '678 Patents and the '905 and '906 Patents,
2 was also a named inventor on the '274 patent.

3 67. The Lin patent is material to the '905 and '906 Patents for at least the same reasons
4 that the Smith patent is material. For example, the PTAB relied on Lin patent combinations, as it
5 did for the Smith patent combinations, in finding claims 1-6, 9-13, and 15-22 of the predecessor
6 '368 Patent and claims 1-4, 9, 10, 13, 17, 19-23, 27, 29, 44-46, 53, and 61-65 of the predecessor
7 '678 Patent invalid in the *Cisco Systems, Inc., Ciena Corp., Coriant Ops., Inc., Coriant (USA) Inc.,*
8 *and Fujitsu Network Communications, Inc. v. Capella Photonics, Inc.*, Case Nos. IPR2014-01166, -
9 01276 cases. The Federal Circuit affirmed the PTAB's findings, and the determination is now final
10 and non-appealable, confirming the reference's materiality to the now-invalid claims. Capella
11 knowingly, and with an intent to deceive, failed to disclose the Lin reference to the Patent Office
12 during prosecution of the predecessor '368 and '678 Patents.

13 68. Applicants, now including prosecuting attorney Jason Eisenberg, continued to
14 suppress the importance of the Smith patent during the reissue proceedings for the '905 and '906
15 Patents. While the Applicants did disclose the Smith patent, Applicants were silent about the
16 inequitable conduct allegations. Further, rather than pursue reexamination of the predecessor '368
17 and '678 Patents under 35 U.S.C. § 257 to address inequitable conduct, Applicants instead elected
18 to abandon the patents in favor of the '905 and '906 Patents. Additionally, Applicants took
19 affirmative steps during the '905 and '906 Patent reissue proceedings to challenge whether the
20 Smith patent qualified as prior art, despite that issue having been finally resolved against Capella in
21 the IPR and appeal proceedings on the predecessor '368 and '678 Patents. In addition to violating
22 37 C.F.R. § 42.73(d)(3), Applicants' actions further demonstrate the concerted efforts and intent to
23 deceive the Patent Office about the Smith patent.

24 69. Given the above facts and circumstances, including: (1) systematically withholding
25 or obfuscating the relevance of the known prior art; (2) multiple attempts to hide the real
26 "mistakes" in the patents that were reissued as the predecessor '368 and '678 Patents; (3) amending
27 claims to highlight distinctions over weaker, disclosed, prior art while withholding art that
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disclosed some or all of those same distinctions; and (4) continuing to hide its inequitable conduct during the reissue proceedings for the currently-asserted patents, the actions by Larry Schwerin, Barry N. Young, as well as possibly other Applicants, and others associated with the prosecution of the predecessor '368 and '678 Patents, were not caused by some mistake, but instead the single most likely explanation for these acts is that they were done with an intent to deceive the Patent Office and obtain patents that could be enforced against Cisco and others. The Applicants had strong motivations to do so, as they stood to profit from sale of the company at a higher valuation or through a patent licensing campaign if the sale failed.

70. In addition to being unenforceable due to the inequitable conduct in the procurement of the '368 and '678 Patents, the '905 and '906 Patents are also unenforceable as a result of inequitable conduct by Jason Eisenberg, Esq. (who prosecuted the reissue proceedings), as well as possibly the other applicant(s), their attorney(s), and/or their agent(s) and/or other person(s) involved in the preparation and/or prosecution of '905 and '906 Patents and related patent applications (collectively the "'905 and '906 Patent Applicants"). Each of the '905 and '906 Patent Applicants was subject to the duties of disclosure, candor, and good faith under 37 C.F.R. § 1.56 and a duty to not take actions inconsistent with an adverse judgment under 37 C.F.R. § 42.73(d)(3).

71. Cisco alleges that said inequitable conduct comprised intentional misrepresentations including, without limitation, statements during prosecution in breach of the duty of candor and good faith required by 37 C.F.R. § 1.56 and contrary to the adverse judgments against Capella in breach of 37 C.F.R. § 42.73(d)(3), with the intent to deceive the Examiner. Specifically, and as pled in additional detail in the subsequent paragraphs of this defense, prosecuting attorney Jason Eisenberg, as well as possibly other '905 and '906 Patent Applicants, misrepresented the finality of the IPR rulings and the subsequent appeals in order to advocate for different determinations on claim scope and different rulings on prior art status in violation of 37 C.F.R. § 42.73(d)(3) and to attempt to bolster its claim that the reissued claims are substantially identical to the invalidated claims so that it could try to pursue past damages on its nearly expired patents.

1 72. The Supreme Court denied Capella’s writ petition regarding the IPR
2 determinations (and the Federal Circuit’s affirmance of them) on November 5, 2018. Thus, the IPR
3 rulings, including on invalidity, claim construction, and prior art status, were final at least as early
4 as that date. Despite this fact, on March 25, 2019, the ’905 Patent Applicants submitted a “Second
5 Preliminary Amendment in a Reissue Application under 37 C.F.R. § 1.173(b), Support for all
6 Changes to the Claims, and a Status of Co-Pending Proceedings” that stated that the PTAB’s
7 rulings on the construction of “port” were somehow still not final and were appealable.
8 Specifically, the ’905 Patent Applicants stated in regard to the PTAB’s finding that Capella had not
9 disavowed circulator ports, “Applicant respectfully disagrees despite the Federal Circuit’s
10 affirmance and *current intends to continue the appeal*” (emphasis added).

11 73. The ’905 Patent Applicants (Jason Eisenberg, in particular) then proceeded to re-
12 raise its construction and disavowal arguments for the term “port” for the patent family – the
13 arguments that already stood finally rejected. The ’906 Patent Applicants included the same multi-
14 page argument regarding the construction of “port” in a “Second Preliminary Amendment” that was
15 also submitted to the Patent Office on March 25, 2019, though the ’906 Patent submission did not
16 include the language expressly promising to pursue an appeal that was not available to Capella. The
17 misrepresentations in contravention of the adverse judgment against Capella regarding claim scope
18 and claim construction constitute affirmative egregious misconduct.

19 74. In the same March 25, 2019 “Second Preliminary Amendments,” the ’905 and ’906
20 Patent Applicants argued that the Smith patent was not prior art to the ’905 and ’906 Patent family.
21 But, the PTAB’s determination that the Smith patent was indeed prior art to the family (and the
22 Federal Circuit’s affirmance of the PTAB’s FWDs) was final and non-appealable by March 25,
23 2019. The misrepresentations in contravention of the adverse judgment against Capella regarding
24 the established prior art constitutes affirmative egregious misconduct.

25 75. The ’905 and ’906 Patent Applicants’ intent to deceive the Patent Office with its
26 misrepresentations regarding claim scope and claim construction regarding “port” is manifest in its
27 allegations and claims for relief in the present case. Despite adding limitations to the ’905 and ’906
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1 Patent claims during the reissue prosecution, Capella now seeks findings of past infringement and
2 past damages based on its contention that reissued claims are “substantially identical” to the finally
3 invalidated claims of the predecessor ’368 and ’678 Patents. During the prosecution of the ’905 and
4 ’906 Patents, Applicants attempted to avoid expressly conceding that the claim amendments
5 narrowed the claims because conceding that the reissue claim scope was narrowed would invoke
6 intervening rights. Thus, the single most likely reason that the ’905 and ’906 Patent Applicants
7 wrongly characterized the finality of the prior determinations and advanced arguments inconsistent
8 with the prior adverse rulings is that they intended to deceive the Patent Office. The ’905 and ’906
9 Patent Applicants had strong motivations to do so, as they hoped to profit from obfuscating the
10 impact of the reissue amendments so that Capella could try to seek past damages and damages for
11 activities already underway before the reissue date.

12 76. The single most likely reason that the ’905 and ’906 Patent Applicants
13 mischaracterized the finality of the PTAB’s determination that the Smith patent was prior art to the
14 ’905 and ’906 Patent family is that they intended to deceive the Patent Office. As described in
15 detail above, the Smith patent reference disclosed certain claim terms, helping render predecessor
16 ’368 and ’678 Patent claims invalid (and making it a material reference). The Applicants were also
17 on notice that the Smith patent is at the heart of the inequitable conduct issues plaguing the
18 predecessor ’368 and ’678 Patents that should render the entire family unenforceable. The ’905 and
19 ’906 Patent Applicants had strong motivations to attempt to whitewash the Smith patent’s
20 materiality through inaccurate and misleading disclosure during the ’905 and ’906 Patent reissue
21 proceedings because the prior efforts to withhold the Smith patent from the Patent Office should
22 render the family unenforceable. And given the adjudged materiality of the Smith patent to the
23 limitations identified above (which are common to the invalidated ’368 and ’678 Patent claims and
24 ’905 and ’906 Patent claims), the ’905 and ’906 Patent Applicants also had strong motivations to
25 misrepresent the adjudged prior art status of the Smith patent so that it could get pending claims
26 issued to enforce against Cisco and others before the patents expire.

27 77. In sum, Cisco has shown that Capella has committed inequitable conduct at least to
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1 the extent that Cisco has shown (1) a knowing misrepresentation of facts, failure to disclose
2 information, or submission of false information, (2) materiality of the facts or information, and (3)
3 intent to deceive the Patent Office by Capella.

4 78. Notably, the present inequitable-conduct allegations are substantially similar to the
5 inequitable conduct allegations leveled against Capella in prior cases before the Hon. Judge Chen
6 of the Northern District of California involving related, predecessor patents. *See, e.g., Capella*
7 *Photonics, Inc. v. Cisco Systems, Inc.*, C.A. No. 3-14-cv-03348-EMC, Dkt. 146. In that case, Judge
8 Chen denied, in relevant part, Capella’s motion to strike those inequitable-conduct allegations.

9 79. In particular, Judge Chen determined: (1) that the pleadings adequately alleged that
10 the Smith patent is but-for material (*id.* at 12); (2) that they adequately alleged that the Capella
11 Applicants knowingly withheld the Smith patent (*id.* at 13); (3) that they adequately alleged that the
12 Smith patent is prior art based on the contents of the Smith provisional applications (*id.* at 13-14);
13 (4) that it is also reasonable to infer that the specific Capella Applicants knew the contents of the
14 Smith provisional (*id.* at 14-15); (5) that it is reasonable to infer from the pleadings that those
15 applicants had specific intent to deceive based on allegations of their significant financial incentives
16 (*id.* at 16-18); and (6) that the pleadings identified the who-what-when-where-and how of *Exergen*
17 (*id.* at 16).

18 80. With respect to the first element of inequitable conduct, as discussed above,
19 “[m]alice, intent, knowledge, and other conditions of a person’s mind may be alleged generally.”
20 See Fed. R. Civ. P. 9(b). While allegations of fraud based on information and belief usually do not
21 satisfy the particularity requirements under Rule 9(b), “the rule may be relaxed as to matters within
22 the opposing party’s knowledge.” *Moore v. Kayport Package Exp., Inc.*, 885 F.2d 531, 540 (9th
23 Cir. 1989). Whether Capella or the specified individuals (Schwerin, Young, Davis) actually knew
24 of the references, their contents, and their materiality, are matters that are exclusively within
25 Capella’s knowledge.

26 81. With respect to the second element, the Smith patent is material prior art for the
27 patented features, at least as to the 2-axis limitations, because both the Smith patent and the earlier
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Smith '683 provisional each disclosed those features. These facts must be accepted as true at the pleading stage. *Twombly*, 550 U.S. at 555. Moreover, the PTAB has already determined that the Smith patent was entitled to a priority date of September 22, 2000 based on the '683 provisional, and the PTAB's reliance on the Smith patent in finding the asserted claims of the Predecessor Patents invalid explains "'how' an examiner would have used this information in assessing the patentability of the claims," *Exergen*, 575 F.3d at 1329-30. The Smith patent is but-for material prior art and is entitled to a priority date of September 22, 2000.

82. With respect to the third element, Cisco has identified specific individuals (Schwerin, Young, and Davis), as well as their financial interest in the company and how a sale would benefit them as executives of the company. This alone is sufficient for pleading inequitable conduct. Indeed, as Judge Chen previously recognized, a desire to profit is "by far the most likely explanation for attempting to obtain patents via acts of inequitable conduct." *Capella Photonics, Inc. v. Cisco Systems, Inc.*, C.A. No. 3-14-cv-03348-EMC, Dkt. 146, pp. 17-18.

PRAYER FOR RELIEF

WHEREFORE, Cisco respectfully requests that this Court enter a Judgment and Order in its favor and against Capella as follows:

A. Dismissing with prejudice Capella's Counterclaims and all claims asserted therein against Cisco, such that Capella takes nothing by way of its Counterclaims;

B. Declaring that Cisco does not, and has not, infringed, contributed to the infringement of, and/or induced the infringement of any valid claim of the Asserted Patents;

C. Declaring that the claims of the Asserted Patents are invalid, void and/or unenforceable;

D. Entering an award to Cisco of their attorneys' fees and expenses under 35 U.S.C. § 285;

F. Entering an award to Cisco of costs incurred; and

G. Granting to Cisco such other and further relief as the Court may deem just, proper and equitable under the circumstances.

Dated: January 6, 2021

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